REMARKS

Applicants' undersigned attorney wishes to thank Examiner Clardy for the September 1, 2004 interview after final rejection. In the interview it was agreed that the applicants would detail working examples evidencing efficacy enhancement and summarize nonobviousness over the cited references **Hasabe** et al. (US 5,863,863), **Beestman** et al. (US 4,159,901), **Wright** et al. (US 5,750, 468) and **Turner**[1] in order to overcome the rejection of the pending claims.

Claim 97 is amended to require that the claim composition exhibit higher efficacy than a comparable composition not containing oxalic acid. The amendment is supported by the specification at page 25, lines 2-20 and Examples 33 and 39 which show that compositions containing a glyphosate salt and oxalic acid, and having a ratio of glyphosate acid equivalent to oxalic acid exceeded 21:1, had higher average efficacies than comparative compositions not containing oxalic acid.

Claims 84 and 85 are canceled.

I. The Pending Claims

For purposes of this response, the independent claims are grouped as follows:

A. Claims 3, 101, 113 and 123 which are directed, in relevant part, to concentrate compositions comprising glyphosate or a salt or ester thereof, an enhancer compound (e.g., oxalic acid) and a surfactant, wherein the weight ratio of the surfactant to efficacy enhancer is from about 5:1 to about 40:1;

B. Claims 12, 67 and 109 which are directed, in relevant part, to concentrate compositions comprising in excess of 455 g acid equivalent per liter of glyphosate and an enhancer compound (e.g., oxalic acid);

C. (a) Claims 17 and 94 which are directed, in relevant part, to concentrate compositions comprising an enhancer compound (e.g., oxalic acid) and a salt of

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[1] Turner, D.J. "Effects on glyphosate performance, additives and mixing with other herbicides." *The Herbicide Glyphosate*, Chapter 15, pages 221-239 Grossbard et al., ed., Butterworths (1985).

glyphosate selected from a Markush group that excludes the isopropylamine ("IPA") salt and (b) Claim 89 which is directed to a composition comprising glyphosate or a salt or ester thereof and oxalic acid, the composition having a specific gravity in excess of 1.21 thereby excluding IPA salt compositions having a concentration in less than about 360 grams acid equivalent per liter;

D. (a) Claims 26 and 70 which are directed, in relevant part, to concentrate compositions comprising glyphosate predominantly in the form of the potassium salt and an enhancer compound (e.g., oxalic acid), and (b) Claim 75 which is directed to a concentrate composition containing the diammonium salt of glyphosate and oxalic acid;

E. Claim 86 which is directed, in relevant part, to a composition comprising greater than 360 grams acid equivalent per liter of glyphosate or a salt or ester thereof and oxalic acid, wherein the composition has higher broadleaf efficacy than comparable compositions containing EDTA or sodium citrate instead of oxalic acid;

F. Claim 97 which is directed, in relevant part, to an aqueous herbicidal composition comprising glyphosate or a salt or ester thereof and oxalic acid or a salt thereof, wherein the glyphosate (a.e.) and the oxalic acid are present in a weight ratio greater than 21:1;

G. (a) Claim 116 which is directed, in relevant part, to a method of decreasing surfactant loading of an aqueous herbicidal composition, the method comprising adding oxalic acid or a salt thereof to a composition comprising glyphosate or a salt or ester thereof and one or more surfactants, and

(b) Claim 118 which is directed, in relevant part, to a method of decreasing aquatic toxicity of an aqueous herbicidal composition, the method comprising adding oxalic acid or a salt thereof to a composition comprising glyphosate or a salt or ester thereof;

H. Claim 121 which is directed, in relevant part, to a method of controlling growth of morningglory, the method comprising applying an aqueous composition comprising glyphosate or a salt or ester thereof and oxalic acid or a salt thereof to the morningglory foliage; and

I. Claims 128, 140, 146 and 148 which are directed, in relevant part, to solid compositions comprising glyphosate or a salt or ester thereof and an enhancer compound (e.g., oxalic acid). Claim 148 further requires one or more cationic or nonionic surfactants.

II. The Cited Art

The following summary of the cited prior art was presented in detail in the June 3, 2004 response to the March 3, 2004 Office action.

A. Hasabe

As presented in the June 3, 2004 response to the March 3, 2004 Office action, **Hasabe** describes formulating storage stable compositions containing: the IPA salt of glyphosate; an enhancer which may be a quaternary amine, ethoxylated quaternary amine or ethoxylated tertiary amine surfactant (Table 1 compositions 1-6 and 13-18), a tallowamine (15EO) surfactant (Table 1 compositions 7-12), or an ethoxylated quaternary amine in combination with a nonionic ethoxylated lauryl ether amine surfactant (Table 1 composition 19); and oxalic acid ("OA") or a salt thereof. Glyphosate salts are generally described at column 5:24, but particular salts are not described or suggested, while the working examples are directed only to the IPA salt. **Hasabe** provides a general disclosure of a surfactant to OA molar ratio between 10:1 and 1:10 for optimization of **surfactant stability** (columns 1:51-62 and 2:8-33). Further, as reported in example 1 (Tables 1 and 2) OA or a salt thereof is added to the surfactant to achieve temperature stability. Based on tallowamine ethoxylate (15EO), a weight ratio of surfactant to oxalate acid equivalent ("a.e.") between about 1:1 and about 100:1 results.

Example 1 evaluated the stability of combinations of surfactants and various oxalic salts in the absence of glyphosate and at a fixed weight ratio of surfactant to oxalate a.e. of 3.9:1 (molar ratio of 1:3). Table 5 describes concentrates containing 30.4 wt.% a.e. (360 g a.e./l) IPA glyphosate and the Table 1 enhancer compositions wherein the weight ratio of glyphosate a.e. to oxalate a.e. is fixed at about 15.6:1 and

the weight ratio of surfactant to oxalate a.e. is fixed at 3.9:1. Tables 3, 4 and 7 describe single data point glyphosate efficacy enhancement for compositions formed by combining the Table 1 enhancer compounds and IPA glyphosate at a fixed weight ratio of surfactant to oxalate a.e. of 3.9:1; efficacy enhancement at any other ratio is not described or suggested.

Therefore:

1. **Hasabe** does not suggest the claimed efficacy enhancing weight ratio range of 5:1 to 40:1. In particular, **Hasabe** does not describe or suggest a preferred range for **efficacy enhancement**, as is instantly claimed. Herbicidal efficacy is described in working examples 2 and 4, but at a fixed surfactant to oxalate a.e. weight ratio of about 3.9:1; efficacy enhancement at any other ratio is not described or suggested;
2. The claimed range is effective for maximizing glyphosate efficacy and thereby enabling reduced amounts of surfactant and enhancer compound to be used. Applicants have unexpectedly discovered, as compared to **Hasabe**, that enhanced glyphosate efficacy is consistent or increased over the claimed surfactant to enhancer weight ratio range thereby enabling less enhancer and surfactant use while achieving commercial weed control and advantageously resulting in lower application rates, lower cost and reduced environmental burden.
3. The Applicants, not **Hasabe**, discovered the relationship between the claimed ratio and the glyphosate enhancing effect. **Hasabe** was not trying to maximize or control glyphosate efficacy - **Hasabe** was maximizing storage stability. Therefore **Hasabe** would not suggest Applicants' experiments evaluating (1) surfactant to enhancer ratio, (2) compositions having in excess of 360 g a.e./L glyphosate, including solid compositions, (3) glyphosate salts other than the IPA salt or (4) controlling morningglory.

B. Turner

Turner discloses that oxalic, citric, tartaric, phosphoric and lactic acids enhance glyphosate activity through their ability to immobilize or sequester polyvalent metal ions. As detailed in the response filed on 24 November 2004 in this application, the entire contents of which are incorporated by reference, Turner describes 2% concentrations of polycarboxylic acids in IPA glyphosate (Roundup®) tank mixes resulting in surfactant to OA weight ratios of about 1:27 and 1:54. **Turner** thus teaches only IPA glyphosate tank mixes and that a large excess by weight of oxalic acid over surfactant is required.

Turner does not teach enhancement of glyphosate activity by OA, but instead describes only restoration of activity otherwise lost by the presence of metal ions. OA-glyphosate synergy was not shown or suggested. Applicants' discovery that glyphosate bioefficacy enhancement, as compared to mere restoration of herbicidal activity through ion chelation as described by **Turner**, can be achieved is surprising and unexpected.

Turner teaches away from the inclusion of the claimed enhancers in glyphosate liquid and solid concentrates. In particular, **Turner**, at page 230, teaches away from the inclusion of enhancers in glyphosate concentrates by disclosing that "[i]n practice these [i.e., acids] additives are difficult to use because they sometimes cause precipitation of glyphosate acid from concentrated spray solutions which can block spray nozzles." Thus Applicant's discovery that di-carboxylic acids can be incorporated in glyphosate concentrates is surprising and unexpected in view of **Turner's** teaching.

C. Beestman

The purpose of **Beestman** is to use thio compounds to reduce equipment corrosion caused by glyphosate. **Beestman** suggests that the many different salts and esters of glyphosate may be expected to exhibit similar corrosion properties. **Beestman** does not even remotely suggest that those glyphosate forms are equivalent herbicidal agents or that compatible formulations comprising the many possible glyphosate salts and esters, alkoxylated alkylamine surfactants and oxalate can be formed.

Beestman, in reference to Research Disclosure 15334 ("RD15334"), describes adding OA to glyphosate tank mixes containing hard water (having about 100 to about 2000 ppm Ca^{++} or Mg^{++} ions) at an OA to ion ratio between 1:2 and 2:1, and a weight

ratio of glyphosate to OA of between 1:10 and 10:1 in order to restore glyphosate efficacy otherwise lost by the presence of the metal ions (column 7:38-66). RD15334 at Table 1 describes by working example tank mixes containing OA, about 6 g/l a.i. (about 4.4 g/l a.e.) IPA glyphosate at an IPA glyphosate a.e. to OA weight ratio range of about 5:1 to 1:7, an ethoxylated fatty acid amine (20EO) surfactant, and Ca ions, wherein the molar ratio of oxalate to Ca ions is between 1:1 and 2:1. RD15334 does not disclose surfactant concentration thus surfactant to oxalate ratios cannot be calculated, nor is there any suggestion of a ratio such as a weight excess of surfactant over oxalate.

Beestman experiment 11 is directed to OA (see col. 4, lines 34-68, col. 6, lines 11-17, Table I, and col. 7, lines 38-41), and a surfactant, but only corrosive effects of glyphosate were studied, herbicidal efficacy was not evaluated. Thus **Beestman** shows that the many different salts of glyphosate are equivalent **corrosion** inducing agents, but Beestman does not teach that those salts are equivalent **herbicidal** agents.

D. Wright

Wright describes liquid concentrates containing etheramine surfactant and up to 500 g a.e./L glyphosate. **Wright** provides no disclosure or suggestion of di- or polycarboxylic acids or any pesticidal composition containing an enhancer compound that (1) increases cell membrane permeability within the plant to increase cellular uptake of the pesticide in the plant or (2) increases expression of hydroxyproline-rich glycoproteins which increases movement of the pesticide to the plant phloem.

III. Glyphosate Formulation is an Unpredictable Art

Glyphosate formulation is an unpredictable art with factors such as the salt of glyphosate, the surfactant system employed, and the destabilizing and/or stabilizing effects of additives all interacting in unforseeable ways such as by causing unstable compositions or by causing glyphosate antagonism. See, for instance, (a) the present specification at page 5, lines 1-5, and page 8, line 16 to page 9, line 19, (b) **Turner**, at

page 230, as described above, (c) Hasabe at column 1:18-30) and (d) **Wright** at column 1:46-59 and column 8:12-18.

IV. Rejection under 35 U.S.C. §103(a)

A. Group A claims 3, 101, 113 and 123

1. The claimed surfactant to enhancer ("S:En") weight ratio of 5:1 to 40:1 as required by each of claims 3, 101, 113 and 123 is surprising in view of **Hasabe**.

As presented in the June 3, 2004 response at pages 43-44, Applicants have unexpectedly discovered and demonstrated in examples 10, 14-16, 18, 33, 35, 36, 41, 47 and 58-64 that, for a given glyphosate concentration, enhanced glyphosate efficacy is at least equal to efficacy at S:En ratios lower than 5:1, for example 4:1, and remains relatively consistent over the claimed surfactant to enhancer weight ratio range. That result is surprising in view of **Hasabe**. In particular, one skilled in the art would understand from **Hasabe** that surfactant to enhancer weight ratios in the claimed range, by virtue of lower enhancer loading, would result in diminished glyphosate efficacy thereby requiring higher glyphosate application rates in order to maintain efficacy. Moreover, optimization of the teaching of **Hasabe** would not lead to the claimed ratio. Only the Applicants made the important discovery that high S:En ratios can be employed without incurring an efficacy penalty thereby enabling less enhancer and surfactant use while achieving commercial weed control, advantageously resulting in lower application rates, lower cost and reduced environmental burden.

As stated at page 44, paragraph (G) of the June 3, 2004 response, Applicants have additionally demonstrated greater glyphosate efficacy for surfactant to OA in ratios in the preferred 5:1 to 40:1 range as compared to less than 5:1. Data supporting increased glyphosate efficacy in the claimed S:En range of 5:1 to

40:1 is summarized in the table below where %control is the average for all application rates for which at least one of the compositions evaluated exhibited a %control of at least 60%. "Plant" is indicated by Bayer code where ABUTH is velvetleaf, ECHCF is Japanese millet, SEBEX is hemp sesbania, IPOLA is pitted morningglory, ECHCG is barnyardgrass, SIDSP is prickly sida and CASOB is sicklepod.

Table (pg)	Gly. Salt	Plant	S:OA (comp. #)	%cont.	S:OA (comp. #)	%cont.
5b (111)	K	ABUTH	6:1 (611C6L)	86.1	3.6:1 (611H3J)	81.1
5c (111)	K	ECHCF	6:1 (611C6L)	69.8	3.6:1 (611H3J)	66.9
39b (177)	K	ABUTH	9.5:1 (026H7J)	89.8	4.9:1 (026G4T)	85.6
39b (177)	K	ABUTH	4.3:1 (026I4F)	84.0	3:1 (026K6X)	82.3
39c (177)	K	ECHCF	9.5:1 (026H7J)[a]	76.7	4.9:1 (026G4T)	63.5
39c (177)	K	ECHCF	4.3:1 (026I4F)	75.4	3:1 (026K6X)	78.4
47b (193)	K	ABUTH	19:1 (621C3E)	85.4	9:1 (621D8H)	85.9
47b (193)	K	ABUTH	4:1 (621E7S)	84.6	2.3:1 (621F3X)	81.7
47b (193)	K	ABUTH	1.5:1 (621G9K)	85.0	1:1 (621H2A)	85.0
48c (196)	K	SEBEX	8:1 (613B9I)	73.3	4:1 (613C5G)	69.7
48c (196)	K	SEBEX	8:1 (613E7B)[b]	70.9	4:1 (613F7S)[b]	69.2
50b (199)	K	ABUTH	11:1 (638F7N)	82.6	6:1 (638B9K)	87.1
50b (199)	K	ABUTH	4:1 (638G5B)	79.3	----	----
55b (209)	K	ABUTH	8:1 (603A8U)[c]	87.0	6:1 (603D2F)	77.7
55b (209)	K	ABUTH	4:1 (603F1E)	82.7	3.5:1 (603G7K)	84.8
60c (220)	IPA	SEBEX	12.7:1 (30:1 gly:OA)	71.9	5.6:1 (15:1 gly:OA)	72.5
60c (220)	IPA	SEBEX	1.1:1 (3:1 gly:OA)	70.7	----	----
61a (222)	IPA	IPOLA	7.5:1 (30:1 gly:OA)	77.5	3.8:1 (15:1 gly:OA)	74.7

61a (222)	IPA	IPOLA	1:0.8 (3:1 gly:OA)	76.3	----	----
61a (222)	IPA	ECHCG	7.5:1 (30:1 gly:OA)	99.3	3.8:1 (15:1 gly:OA)	98.3
61a (222)	IPA	ECHCG	1:0.8 (3:1 gly:OA)	96.7	----	----
62a (226)	IPA	ABUTH	7.5:1 (30:1 gly:OA)	96.9	3.8:1 (15:1 gly:OA)	93.8
62a (226)	IPA	ABUTH	1:0.8 (3:1 gly:OA)	94.6	----	----
62a (226)	IPA	SIDSP	7.5:1 (30:1 gly:OA)	98.3	3.8:1 (15:1 gly:OA)	95.3
62a (226)	IPA	SIDSP	1:0.8 (3:1 gly:OA)	95.9	----	----
62a (226)	IPA	CASOB	7.5:1 (30:1 gly:OA)	82.7	3.8:1 (15:1 gly:OA)	81.1
62a (226)	IPA	CASOB	1:0.8 (3:1 gly:OA)	80.1	----	----
62a (226)	IPA	CASOB	8.6:1 (30:1 gly:OA)	82.5	4.3:1 (15:1 gly:OA)	81.7
62a (226)	IPA	CASOB	1:0.9 (3:1 gly:OA)	81.0	----	----

[a] Composition 026H7J provided the highest %control (92.7%) at the greatest rate of application, 400 g a.e. glyphosate per hectare.

[b] Compositions 613B9I and 613C5G were formulated with a PEG 9 C_{11} alcohol surfactant and compositions 613E7B and 613F7S were formulated with a linear alkylpolyglucoside surfactant.

c Efficacy enhancement over S:En ratios of less than 5:1 was shown for an 8:1 ratio, but not for a 6:1 ratio.

2. **Turner** describes a S:OA ratio of 1:27 (i.e., an OA excess) and does not describe an efficacy enhancement effect above restoration of that lost by the presence of metal ions. **Turner** thus teaches away from the claimed range for glyphosate efficacy enhancement and does not overcome the deficiencies of **Hasabe**. **Turner** also teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions and therefore teaches away from including the claimed enhancers in glyphosate concentrates.
3. **Beestman** fails to describe or suggest any S:OA ratio and does not describe any efficacy enhancement effect above restoration of that lost by the presence of metal ions, and does not overcome the deficiencies of **Hasabe** and **Turner**.
4. **Wright** is silent as to any claimed efficacy enhancer.

Claims 3, 101, 113 and 123, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

B. Group B Claims 12, 67 and 109

Hasabe, Beestman and **Wright** do not describe or suggest compositions comprising at least 455 g acid equivalent per liter of glyphosate and an efficacy enhancer compound as required by claims 12, 67 and 109. **Turner** teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions and therefore teaches away from including the claimed enhancers in glyphosate concentrates. Examples 51, 54 and 55 of the present application demonstrate the stability of a glyphosate concentrate composition containing from 480 to 488 g a.e./L potassium glyphosate, a surfactant system and oxalic acid.

Claims 12, 69 and 109, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

C. Group C Claims 17, 89 and 94

Hasabe does not describe any preferred glyphosate salt, and only the IPA salt in concentrations as high as 360 g a.e./L is exemplified. **Hasabe** therefore does not describe or suggest glyphosate salts other than the IPA salt or IPA glyphosate compositions containing greater than 360 g a.e./L. **Turner** describes only IPA glyphosate and teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions thereby teaching away from including the claimed enhancers in glyphosate concentrates. **Beestman** describes only the IPA glyphosate salt and does not describe or suggest glyphosate concentrates or efficacy enhancers. In addition to examples 51 and 54 as described above, example 27 of the present application demonstrates the stability of a glyphosate concentrate composition containing 434 g a.e./L IPA glyphosate, a surfactant system and oxalic acid.

Claims 17, 89 and 94, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

D. Group D Claims 26, 70 and 75

Hasabe, **Turner** and **Beestman** fail to describe or suggest any glyphosate salt other than the IPA salt. **Turner** teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions and therefore teaches away from including the claimed enhancers in glyphosate concentrates, and does not suggest glyphosate efficacy synergy associated with the claimed enhancers. **Beestman** does not describe or suggest glyphosate concentrate compositions or glyphosate efficacy synergy associated with the claimed enhancers. **Wright** does not describe or suggest the claimed enhancers.

Group D claims 26, 70 and 75, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

E. Group E Claim 86

Hasabe, Turner, Beestman and **Wright** fail to describe or suggest a composition comprising greater than 360 grams acid equivalent per liter of glyphosate or a salt or ester thereof and oxalic acid, wherein the composition has higher broadleaf efficacy than comparable compositions containing EDTA or sodium citrate instead of oxalic acid as required by claim 86.

Experimental examples 4 and 7 of the instant application demonstrate that oxalic acid gives greater glyphosate efficacy enhancement on the broadleaf plant species velvetleaf as compared to analogous EDTA and citric acid formulations (see page 109, lines 17-18, and page 116, lines 8-9).

Hasabe does not describe or suggest concentrates having a glyphosate concentration greater than 360 g a.e./L or provide any comparative EDTA or citric acid efficacy data. **Beestman** does not describe or suggest glyphosate concentrate compositions or glyphosate efficacy synergy associated with the claimed enhancers. **Wright** does not describe or suggest the claimed enhancers.

Turner (1985) discloses that glyphosate can be inactivated by many divalent and trivalent cations, such as by calcium ions in hard water. **Turner**, in Table 15.4 at page 230, reports *Agropyron repens* (a rhizomatous, perennial grass species as opposed to the claimed broadleaf species) shoot growth control data and indicates that oxalic acid in combination with glyphosate provides greater shoot control than a citric acid additive. Applicants have further reviewed the **Turner and Loader** (1978) reference[2] from which the data of Table 15.4 was obtained. That reference at page 202, Table 1, discloses that at application rates of 0.2 kg/ha and 0.4 kg/ha oxalic acid and citric acid provide

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[2] See D.J. Turner and M.P.C. Loader, *Complexing agents as herbicide additives* (1978), Weed Research 1978, Volume 18, 199-207. Submitted to the USPTO as reference number 68 in the IDS of February 16, 2002.

similar *Agropyron repens* rhizome [3] control. **Turner** therefore has conflicting teaching regarding the glyphosate efficacy enhancing effect of oxalic acid on grass plant species as compared to citric acid. Moreover, **Turner** fails to suggest any glyphosate efficacy enhancement with EDTA or citric acid on broadleaf plant species as compared to oxalic acid. **Turner** also teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions and therefore teaches away from including the claimed enhancers in glyphosate concentrates.

Group E claim 86, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

F. Group F Claim 97

Hasabe, **Turner, Beestman** and **Wright** fail to describe or suggest an aqueous herbicidal composition comprising glyphosate or a salt or ester thereof and oxalic acid or a salt thereof, wherein the glyphosate (a.e.) and the oxalic acid are present in a weight ratio greater than 21:1 and wherein the composition exhibits greater efficacy than a comparable composition not containing oxalic acid.

Hasabe teaches a maximum glyphosate a.e. to oxalic acid weight ratio of about 15.6:1 for efficacy enhancement. **Turner** fails to teach OA-mediated glyphosate efficacy enhancement and describes an excess of oxalic acid over glyphosate (a.e. basis), with a calculated glyphosate to OA ratio of about 1:14. **Beestman** fails to teach OA-mediated glyphosate efficacy enhancement and describes a glyphosate IPA to OA weight ratio range of 10:1 to 1:10, or 7:1 to 1:14 on a glyphosate a.e. basis. **Wright** fails to describe or suggest oxalic acid.

The Applicants have surprisingly demonstrated that glyphosate efficacy enhancement at a glyphosate a.e. to OA weight ratio exceeding 21:1 is generally equal to, and can exceed, the efficacy enhancement at ratios less than 21:1 thereby allowing

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[3]A rhizome is "[a]n underground horizontal stem, often thickened and tuber-shaped, and possessing buds, nodes and scale-like leaves." quoting *McGraw-Hill Dictionary of Scientific and Technical Terms*, 6th Ed. (2003).

lower application rates of glyphosate and/or oxalic acid than suggested by the prior art. For instance: Example 33 shows that average glyphosate velvetleaf efficacy over all application rates tested was greater at a glyphosate a.e. to OA ratio of 30:1 (composition 359E7B) as compared to 20:1 (composition 359E7B); Example 34 shows that average glyphosate Indian mustard efficacy over all application rates tested was greater at a glyphosate a.e. to OA ratios of 40:1 (composition 369D4W) and 30:1 (composition 369E6U) as compared to 20:1 (composition 359G3A); and Example 39 shows that average glyphosate velvetleaf and Japanese millet efficacy over all application rates tested was greater at a glyphosate a.e. to OA ratio of 28:1 (composition 026H7J) as compared to 13:1 (composition 026I4F) and 15:1 (composition 026G4T).

Group F claim 97, as well as the claims that depend therefrom, meets the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

G. Group G Claims 116 and 118

Hasabe, Turner, Beestman and **Wright** fail to describe or suggest methods for decreasing surfactant loading or aqueous toxicity of aqueous herbicidal compositions comprising glyphosate or a salt or ester thereof, the method comprising adding oxalic acid or a salt thereof to the composition as required by claims 116 and 118, respectively.

The applicants have demonstrated that the addition of oxalic acid to glyphosate formulations increases efficacy over comparable compositions not containing oxalic acid. See, for instance and among others, Examples 11-14, 17, 19 and 21 where oxalic acid, or an oxalic acid salt, was shown to increase the efficacy of compositions containing the potassium, IPA, ammonium and di-ammonium salts of glyphosate. In particular, see Example 40 where efficacy was maintained for potassium glyphosate compositions comprising an oxalic acid salt and reduced surfactant loading, and Example 36 at page 172, lines 8-10, where increasing oxalic acid concentration and simultaneously reducing surfactant concentration resulted in an efficacy increase. As described at page 25, lines 2-25, of the specification the Applicants have discovered

that addition of a relatively small amount of oxalic acid significantly reduces the amount of surfactant needed to provide a stable composition which, upon dilution and application to foliage of a plant, provides desired plant growth control. That discovery enables the minimization or sometimes elimination of costly, and in some cases toxic, surfactants from such compositions.

Group G claims 116 and 118, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

H. Group H Claim 121

Hasabe, Turner, Beestman and **Wright** fail to describe or suggest a method of controlling growth of morningglory comprising applying an aqueous composition comprising glyphosate or a salt or ester thereof and oxalic acid or a salt thereof to the morningglory foliage as required by claim 121.

The applicants have demonstrated that compositions comprising a combination of glyphosate or a salt or ester thereof and oxalic acid or a salt thereof enhance morningglory efficacy efficiency compared to corresponding compositions not containing oxalic acid. For instance, see Examples 18, 30 and 38 where each composition containing oxalic acid provided higher average efficacy compared to corresponding compositions not containing oxalic acid.

Claim 121, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

I. Group I Claims 128, 140, 146 and 148

Hasabe, Turner and **Beestman** fail to describe or suggest solid compositions comprising glyphosate or a salt or ester thereof and an efficacy enhancer compound as required by each of claims 128, 140, 146 and 148. **Turner** teaches that di-carboxylic acids sometimes cause precipitation of glyphosate acid from concentrated spray solutions and therefore teaches away from including the claimed enhancers in solid glyphosate compositions. **Wright** describes solid glyphosate compositions but does not describe or suggest the claimed efficacy enhancers.

The applicants have demonstrated that solid glyphosate compositions comprising oxalic acid exhibit enhanced efficacy over comparable commercial standards (see Example 20).

Group I claims 128, 140, 146 and 148, as well as the claims that depend therefrom, meet the requirements under 35 U.S.C §103(a) and are therefore in condition for allowance.

V. Conclusion

In view of the foregoing, Applicant respectfully submits that all pending claims are in condition for allowance. Accordingly, Applicant respectfully requests favorable reconsideration and allowance of all pending claims.

The Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No. 19-1345.

Respectfully submitted,

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